
BECOME A NUCLEAR OFFICER
THE MOST ADVANCED TECHNICAL TRAINING IN THE MILITARY
AMERICA'S
NAVY
FORGED BY THE SEA

NICE TO MEET YOU

NAVY BY THE NUMBERS

OVER **330K** ACTIVE-DUTY SAILORS

OVER **130** ESSENTIAL CAREER FIELDS

(HEALTH CARE, ELECTRONICS, NUCLEAR ENGINEERING, AVIATION AND MORE)

3,700+ AIRCRAFT

289 DEPLOYABLE BATTLE FORCE SHIPS

100+ PORTS OF CALL

WHAT YOU WILL SEE TODAY

- Overview of Nuclear Power
- Navy + Nuclear Power
- NUPOC Program
- Nuclear Officer Careers
- Training
- Beyond the Navy

WHY NUCLEAR?

EXTREMELY LOW CARBON FOOTPRINT

LOW FUEL COSTS

MOST STABLE SOURCE OF POWER

HIGHEST ENERGY DENSITY OF ALL PRACTICAL FUEL SOURCES

NUCLEAR FUEL

A single uranium fuel pellet contains the energy equivalent of:

- 149 GALLONS OF OIL
- ONE TON OF COAL
- 17,000 CUBIC FEET OF NATURAL GAS

WHY BUILD A NUCLEAR NAVY?

1

Before nuclear power, submarines ran on diesel engines and could only submerge **using batteries**.

2

Now one ship can potentially last **40 years** without refueling and does not need an oxygen source.

3

A nuclear aircraft carrier can carry **twice the amount of aircraft fuel**, 30% more weapons and 300,000 cubic feet of additional space.

4

Nuclear power is **cleaner and quieter**, and it **lasts longer** than other fuels.

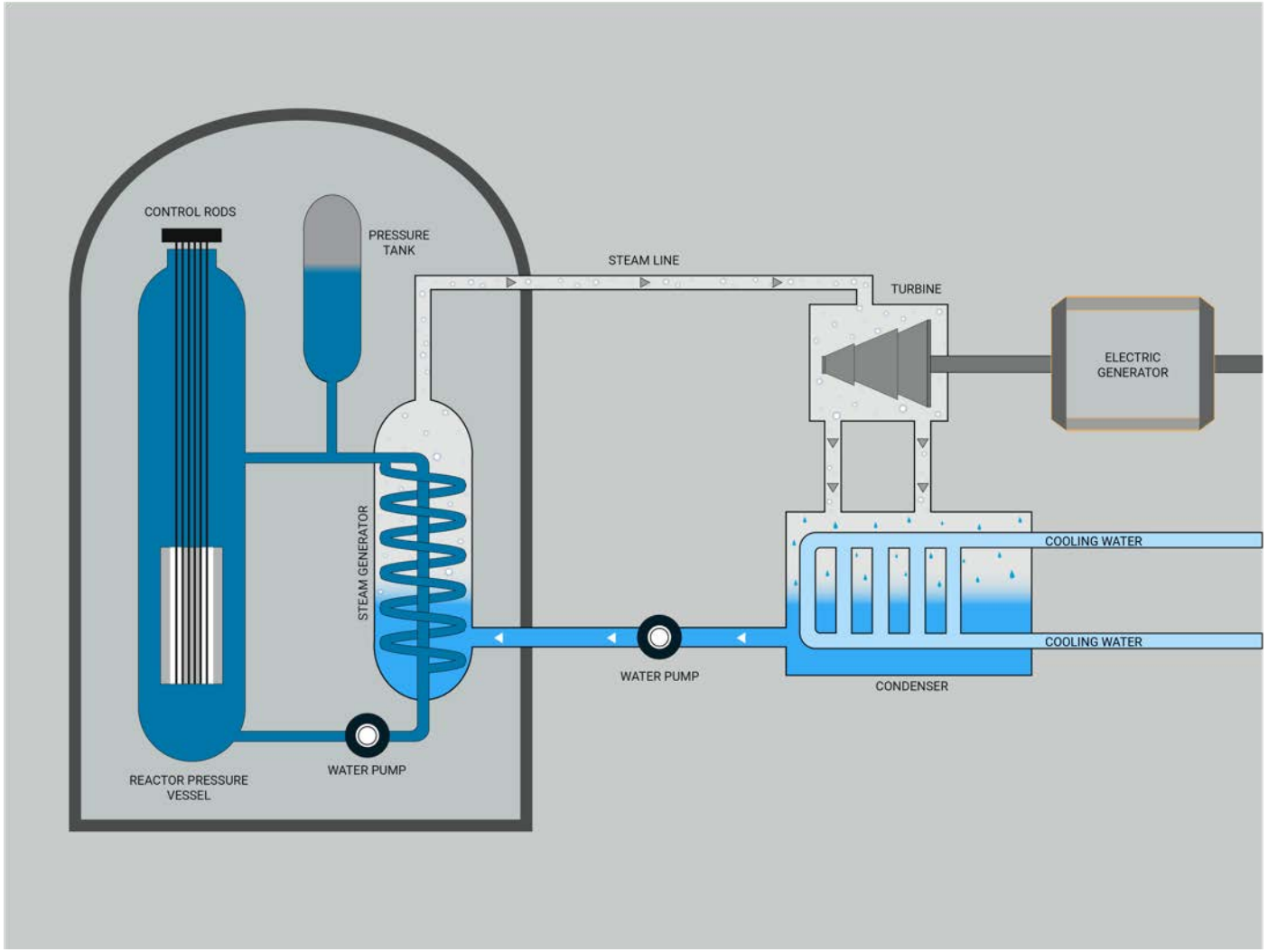
4 STEPS TO NUCLEAR POWER

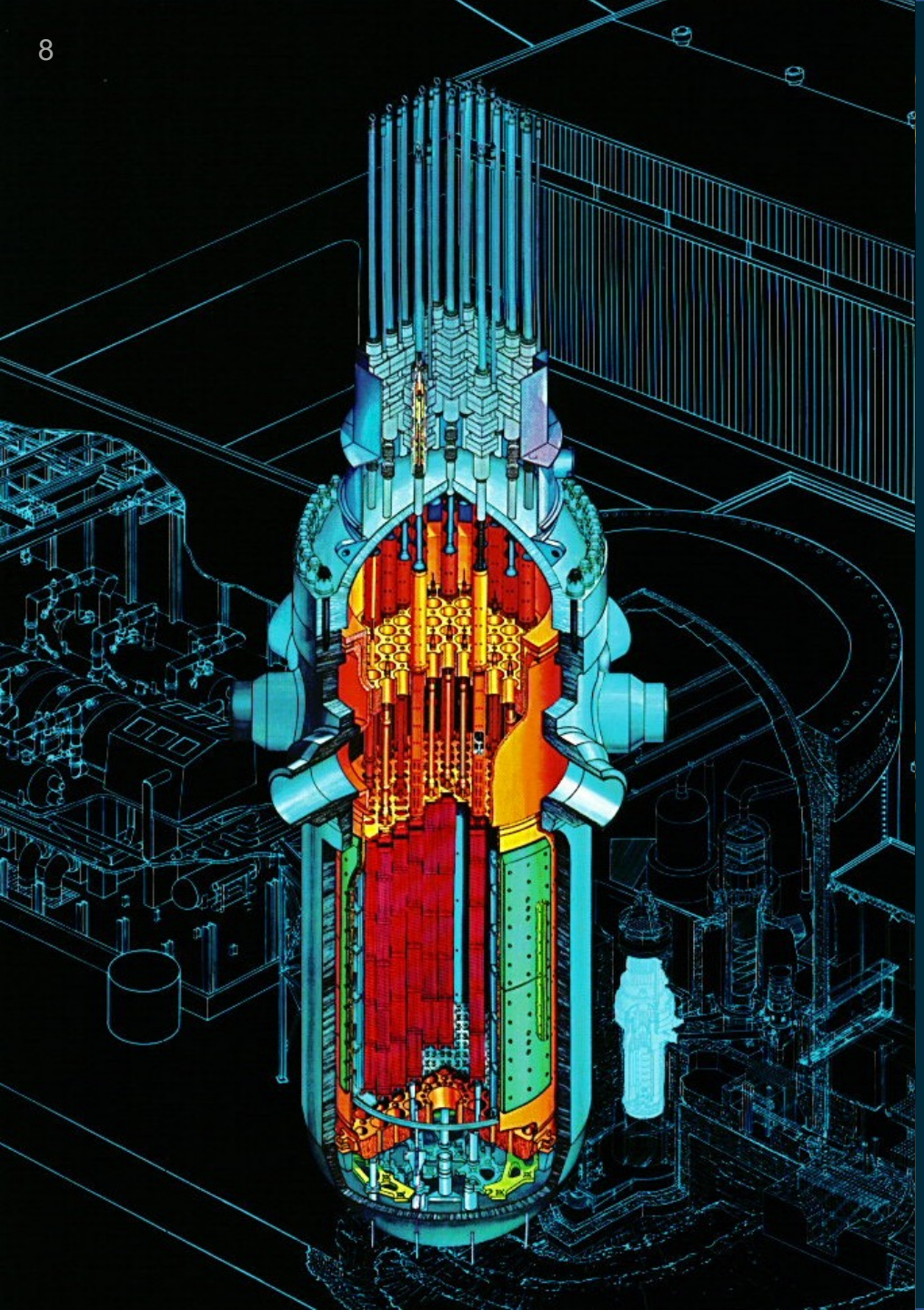
1. NUCLEAR FISSION HEATS WATER INSIDE THE REACTOR VESSEL.

2. PRESSURIZED WATER IN THE PRIMARY LOOP CARRIES THE HEAT THROUGH THE STEAM GENERATOR.

3. THE HEAT VAPORIZES WATER IN THE SECONDARY LOOP, MAKING STEAM.

4. THE STEAM PASSES THROUGH THE MAIN TURBINE, WHICH GENERATES ELECTRICITY AND PROPULSION.



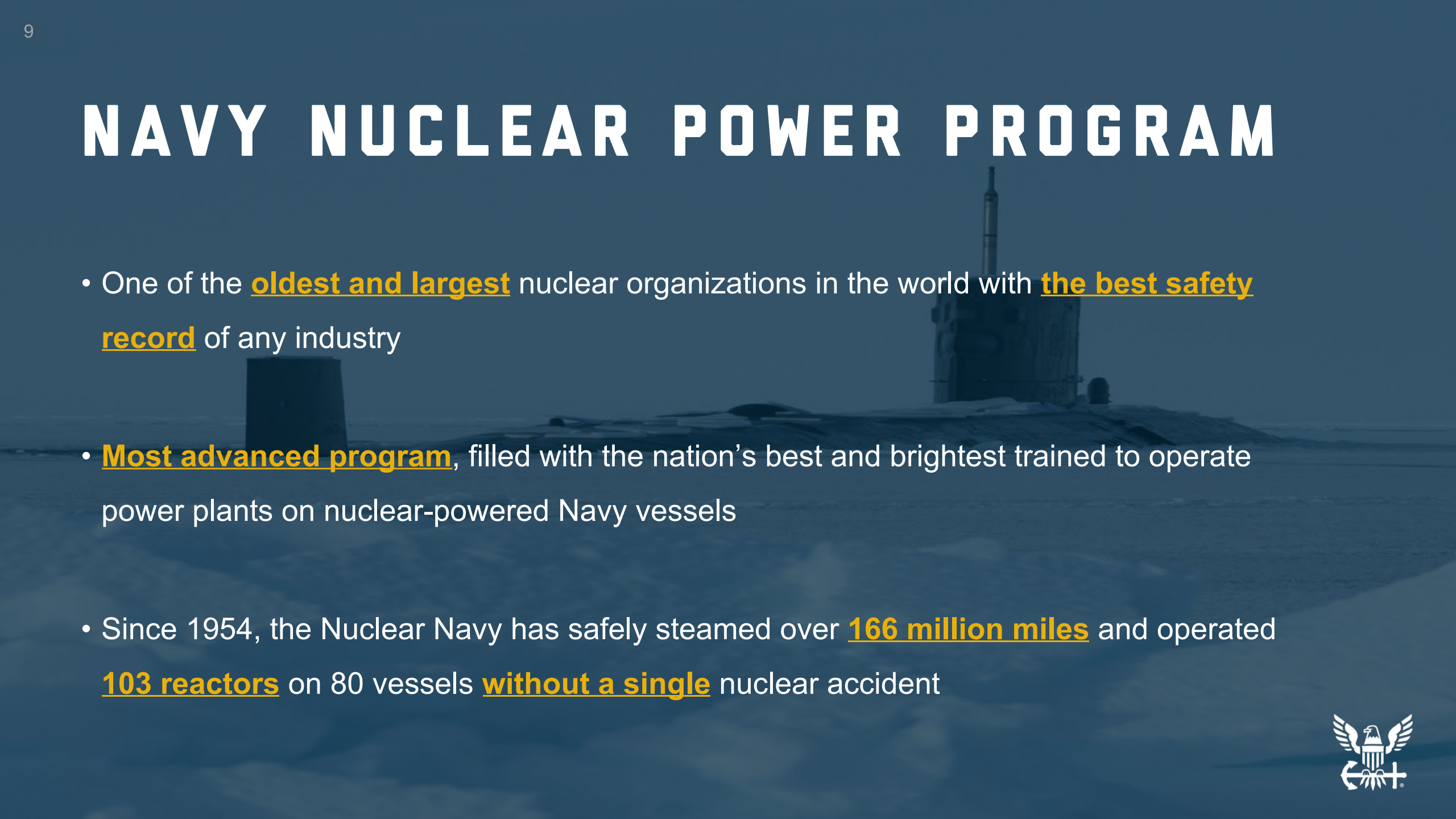


CONTROLLED NUCLEAR FISSION

To control and sustain a nuclear chain reaction, nuclear reactors use **control rods**, which are highly effective neutron-absorbing structures that are inserted and withdrawn to slow down or speed up the reaction.

Inside the reactor vessel, the **fuel assembly** is immersed in water, which acts as both a coolant (to transfer heat) and moderator (to slow neutrons down).

NAVY NUCLEAR POWER PROGRAM



- One of the **oldest and largest** nuclear organizations in the world with **the best safety record** of any industry

- **Most advanced program**, filled with the nation's best and brightest trained to operate power plants on nuclear-powered Navy vessels

- Since 1954, the Nuclear Navy has safely steamed over **166 million miles** and operated **103 reactors** on 80 vessels **without a single** nuclear accident

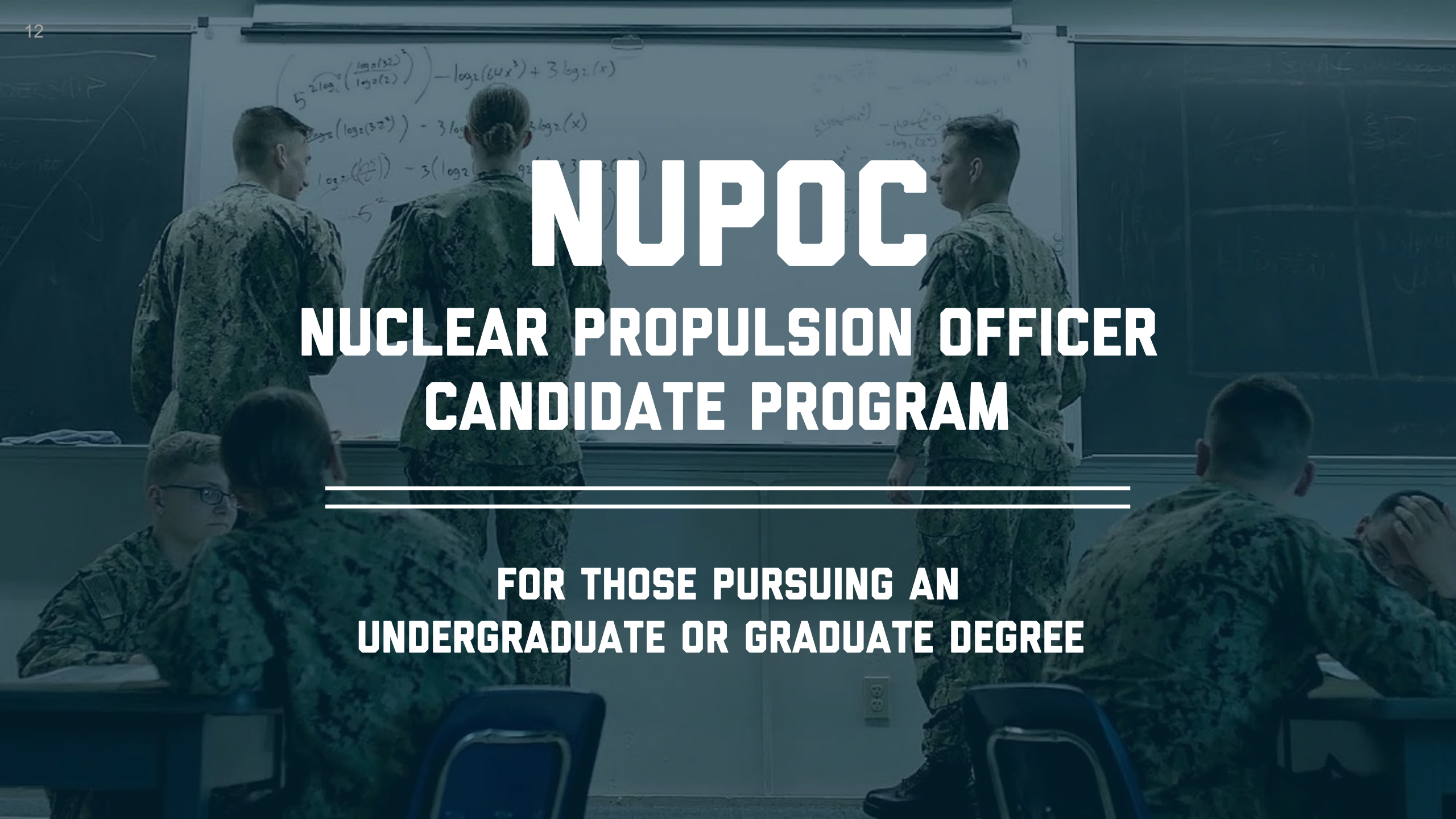
SURFACE

- 400+ NUCLEAR-TRAINED PERSONNEL ON BOARD TO MANAGE 2 INDEPENDENT POWER PLANTS
- MOST PROTECTED SHIP IN THE FLEET
- CAN HOUSE UP TO 75 AIRCRAFT

SUBMARINE

- 125+ PEOPLE ON BOARD THE SUBMARINE (VOLUNTARY BASIS ONLY)
- PERFORM HIGHLY CLASSIFIED MISSIONS
- 71 SUBMARINES IN THE FLEET

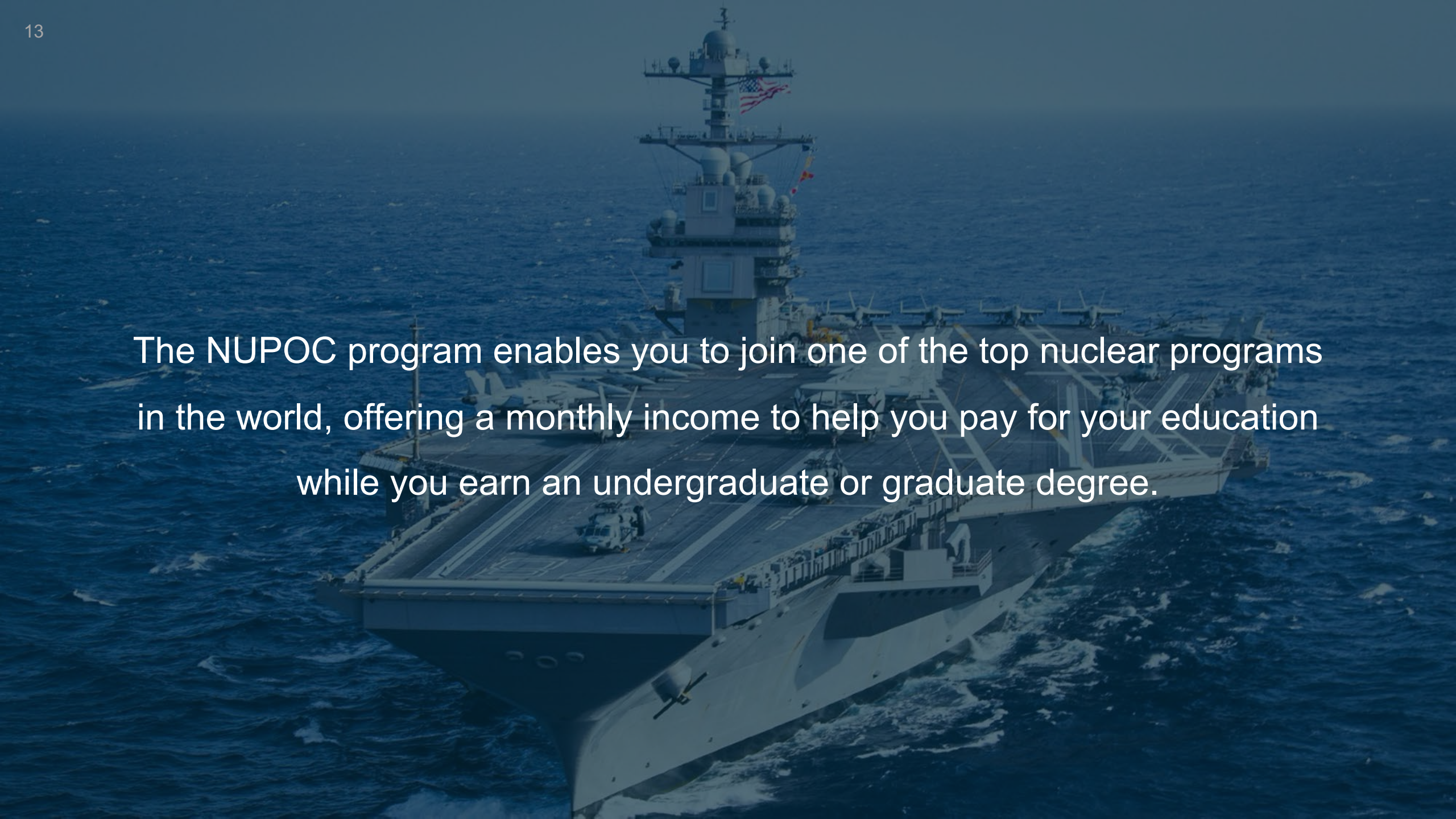
NAVAL NUCLEAR BASES



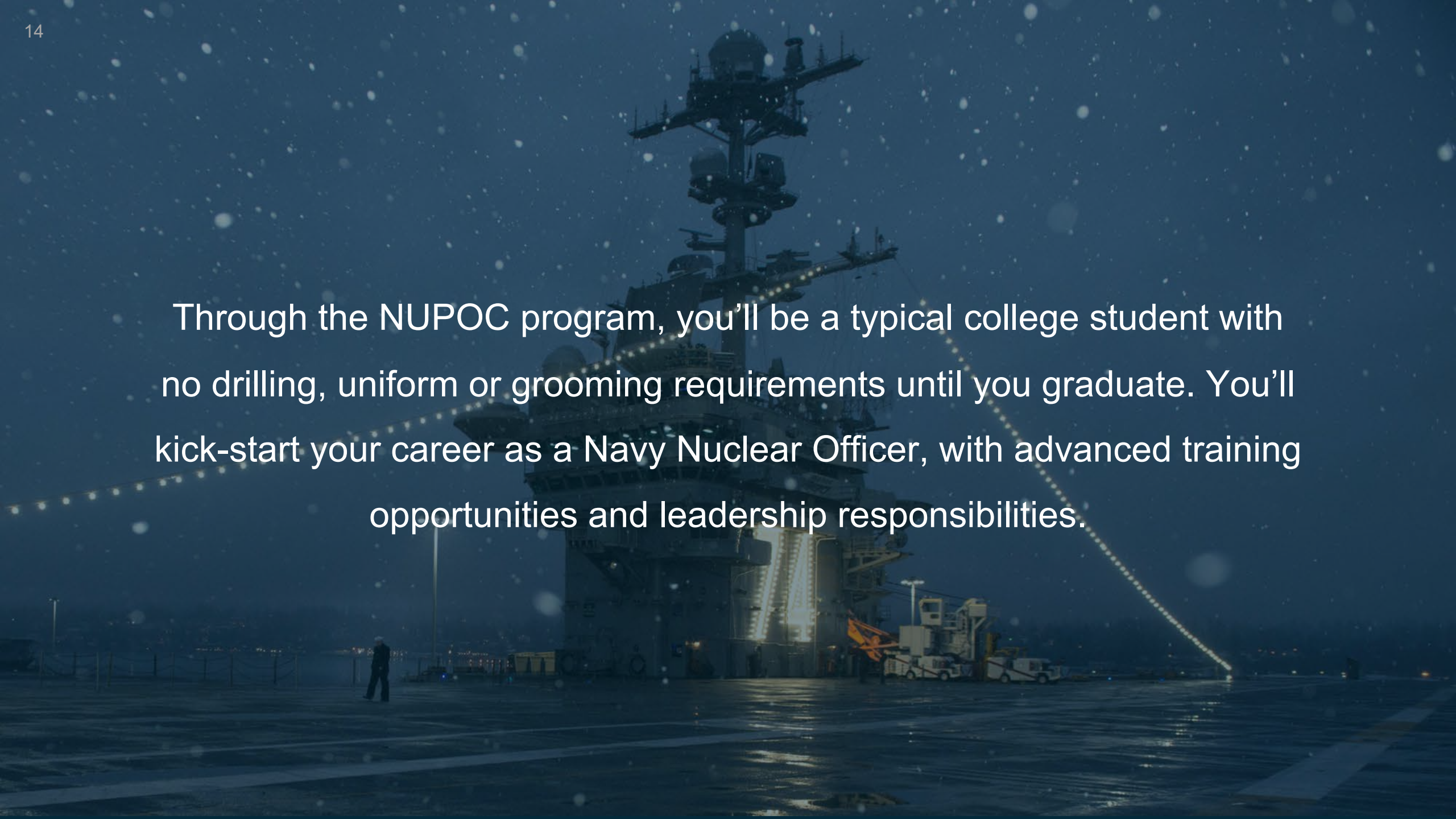
NUPOC

NUCLEAR PROPULSION OFFICER CANDIDATE PROGRAM

FOR THOSE PURSUING AN UNDERGRADUATE OR GRADUATE DEGREE



The NUPOC program enables you to join one of the top nuclear programs in the world, offering a monthly income to help you pay for your education while you earn an undergraduate or graduate degree.



Through the NUPOC program, you'll be a typical college student with no drilling, uniform or grooming requirements until you graduate. You'll kick-start your career as a Navy Nuclear Officer, with advanced training opportunities and leadership responsibilities.

BENEFITS WHILE YOU'RE IN SCHOOL

- Up to $15,000 signing bonus
- Monthly income of up to $5,610, a total of $168,000 while finishing your degree
- Housing allowance
- Full medical, dental, and life insurance benefits for you and your family
- A guaranteed career as a Navy Nuclear Officer upon graduation
- No uniforms, drills or grooming requirements
- Counts toward time-in-service (20 years for retirement)

QUALIFICATIONS

- U.S. citizen, 19-29 at time of commissioning
- Pursuing B.A., B.S. or M.S.
  - Completed one year of calculus and one year of calculus-based physics
  - Within 30 months (or less) of graduation if obtaining bachelor's, 18 months (or less) for Naval Reactors Engineers
  - Within 12 months of graduation if obtaining master's
- Meet physical standards
- Eligible for **TOP SECRET** clearance
  - Good financial standing
  - No criminal record
  - No positive drug tests

MORE BENEFITS AFTER YOU GRADUATE

- Additional $2,000 bonus upon completion of nuclear propulsion training

- Up to $280,000 reenlistment bonuses:
  - Additional 2-4 years active duty: $35,000 annually
  - Additional 6-7 years active duty: $40,000 annually

- Forever GI Bill (up to full tuition, monthly living expenses, transferable to family members)

- Tuition assistance program

- Licensing and certifications paid

- Opportunity to earn college credits toward a degree

NUCLEAR OFFICER CAREERS

NUCLEAR SURFACE WARFARE OFFICER

From conducting missions vital to national security, visiting foreign ports around the globe, responding to natural disasters to provide humanitarian aid, to leading talented Sailors and officers, your responsibilities could include:

- Directing personnel operations aboard Navy vessels, including aircraft carriers
- Managing shipboard weapons and defense systems, including vertical launch systems
- Using high-tech weaponry and advanced technology in battle and ship defense
- Supporting Navy expeditionary forces, Theater Missile Defense operations, anti-submarine warfare, surface-to-air warfare, and support and supply missions

NAVAL REACTORS ENGINEER

As a Navy Reactors Engineer stationed at Naval Reactors Headquarters in Washington, D.C., you will provide technical oversight while managing projects ranging from reactor design to fleet operations to defueling and decommissioning warships.
Responsibilities include:

- Reactor and fluid systems design
- Reactor physics
- Materials development
- Component design such as steam generators, pumps and valves
- Testing and quality control
- Chemistry and radiological controls

NUCLEAR SUBMARINE WARFARE OFFICER

All personnel on submarines are there by choice — it is a completely voluntary assignment.
Submarine Officers are involved in all aspects of operations, including:

- Operating a nuclear reactor and power generation and propulsion systems
- Maintaining onboard weapons systems
- Managing all life support systems
- Driving the ship and charting its position
- Operating sonar, radar, fire control, communications and specialized mission equipment

NUCLEAR POWER SCHOOL INSTRUCTOR

Nuclear Power School Instructors teach a 24-week course to officers and enlisted personnel on science, technology, and power plant operations designed to provide theoretical background knowledge of nuclear power. Areas of instruction include:

- Physics, chemistry, algebra and calculus
- Heat Transfer and Fluid Dynamics
- Reactor Theory
- Mechanical and Electrical Systems Design
- Radiological Controls and Health Physics

NUCLEAR POWER TRAINING UNIT INSTRUCTOR

Nuclear Power Training Unit Instructors provide hands-on training to and direct oversight of nuclear-trained officers and enlisted personnel while operating a nuclear reactor. Areas of instruction during this 26-week course include:

- Reactor startup, steady-state operations and shutdown
- Chemistry analysis and control
- Maintenance review and approval
- Casualty response
- Reactor safeguard systems

TRAINING

YOUR TRAINING

Each Nuclear Officer pathway varies, but most specialties go through the following courses:

- Officer Candidate School (12 weeks) **OR**

  Officer Development School (5 weeks) — Newport, RI
- Nuclear Power School (6 months) — Charleston, SC
- Nuclear Power Training Unit (6 months) — Charleston, SC, or Ballston Spa, NY

Those who pursue a career as Naval Reactors Engineers attend **Bettis Reactor Engineering School** directly following Officer Development School.

(6 months) — Pittsburgh, PA

NAVAL NUCLEAR POWER SCHOOL

- Located in Charleston, SC
- Duration: 6 months
- Curriculum: Math, physics, chemistry, Reactor Plant Operation, Radiological Fundamentals, plus other theoretical courses

NUCLEAR POWER TRAINING UNIT

- Located in Charleston, SC, and Ballston Spa, NY
- Duration: 6 months
- Curriculum: Applying knowledge gained at Nuclear Power School to train on live, operational nuclear reactors

BETTIS REACTOR ENGINEERING SCHOOL

- Located in Pittsburgh, PA
- Duration: 6 months
- Curriculum: Postgraduate-level education in nuclear engineering at Naval Nuclear Laboratory

BEYOND THE NAVY

- The engineering and problem-solving skills developed throughout your Naval Nuclear Officer career will make you an expert in your field; you'll be prepared to move into numerous lucrative civilian career options.
- Unrivaled leadership experiences open opportunities for entering at higher supervisory and managerial levels in the industry-leading technology and engineering spaces, right out of the Navy.
- Many academic admissions boards desire the ambition and work ethic demonstrated by your time spent in the challenging nuclear pipeline, allowing for competitive graduate and doctoral applications.

WANT MORE INFO?

- America's Navy
  www.navy.com
- U.S. Department of Energy
  www.energy.gov
- Nuclear Regulatory Commission
  www.nrc.gov
- World Nuclear Association
  www.world-nuclear.org


QUESTIONS?
AMERICA'S
NAVY
FORGED BY THE SEA